

CLAIMS

1. An aluminum alloy for a cast engine block, said alloy consisting essentially of, by weight, 9.5 to 12.5 % silicon, 0.1 to 1.5 % iron, 0.2 to 3 % manganese, 0.1 to 0.6 % magnesium, up to 0.05 % strontium and the balance aluminum, where the weight ratio of manganese to iron is at least 1.2 to 1.75 when the iron content is equal to or greater than 0.4 % and the weight ratio of manganese to iron is at least 0.6 to 1.2 when the iron content is less than 0.4 % of the alloy.
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2. An aluminum alloy for a cast engine block, said alloy consisting essentially of, by weight, 9.5 to 12.5 % silicon, 0.1 to 1.5 % iron, 1.5 to 4.5 % copper, 0.2 to 3 % manganese, 0.1 to 0.6 % magnesium, 2.0 % max zinc, 0 to 1.5 % nickel, 0.25 % maximum titanium, up to 0.05 % strontium and the balance aluminum, where the weight ratio of manganese to iron is at least 1.2 to 1.75 when the iron content is equal to or greater than 0.4 % and the weight ratio of manganese to iron is at least 0.6 to 1.2 when the iron content is less than 0.4 % of the alloy.
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3. An aluminum alloy for a cast engine block as recited in claim 2 in which the weight ratio of manganese to iron is at least 1.2 to 1.75 when the copper content exceeds 1.5 % or the nickel content exceeds 0.75 %,
4. An aluminum alloy for a cast engine block, said alloy consisting essentially of, by weight, 11.25 to 11.75 % silicon, 0.35 to 0.65 % iron, 1.75 to 2.75 % copper, 0.4 to 1.2 % manganese, 0.15 to 0.3 % magnesium, 0.5 % max zinc, a trace of nickel, 0.2 % maximum titanium, 0.01 % to 0.03 % strontium and the balance aluminum, where the weight ratio of manganese to iron is at least 1.2 to 1.75.
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5. A cast cylinder block for an internal combustion engine when formed of the alloy recited in claim 1.

6. A cast cylinder block for an internal combustion engine when formed of the alloy recited in claim 2.

7. A cast cylinder block for an internal combustion engine when formed of the alloy recited in claim 3.

8. A cast cylinder block for an internal combustion engine when formed of the alloy recited in claim 4.